AMYLOLYTIC ENZYMES AND YEAST FOR BIOFUEL PRODUCTION

Brief description

The invention relates to the use of a combination of amylolytic yeast and bacteria, and their relative enzymes, for the production of bioethanol through a consolidated bioprocess of soluble and raw starch substrates.

Approximately only 10% of amylolytic enzymes can hydrolyse linkages in raw or unmodified starch and these enzymes usually contain starch binding domains.

Target market

Industrial enzyme manufacturers, bioethanol producers.

Value proposition/ Benefits

The combination of alpha-amylase and glucoamylase enzymes and their host organisms is capable of hydrolyzing starches without the specific use of specialized starch binding domains in bioethanol production process. Consolidated bioprocessing in bioethanol production could be an economically viable option compared to existing methods because it incorporates the hydrolysis of the starch and its fermentation in a single step. The invention may include the use of recombinant S. cerevisiae in the process as well.

Innovation status

A national phase application was filed for this invention. The technology and method can be demonstrated on a laboratory scale.

Principal Researchers

Willem Heber VAN ZYL
Tania JOOSTE
Johann Ferdinand GÖRGENS
Maryna SAAYMAN
Lorenzo FAVARO
Marina BASAGLIA
Sergio CASELLA

Keywords

Biofuels, consolidated bioprocess, Thermomyces lanuginoses TLG1, Saccharomycopsis fibuligera SFA1 protein, L. kononenkoae LKA1

Innovus Technology Transfer (PTY) Ltd is Stellenbosch University's wholly-owned technology transfer company. Contact Anita Nel, Innovus Chief Executive Officer, on (021) 808 3826 or send an email to ajnel@sun.ac.za for more information.